Problem J: Delivering Mail

Tortoise: Hey, Achilles. I was about to go for a pizza. Do you want to join me?

Achilles: I'd love to, Mr. T. However, I'm a little busy right now. A friend of mine from the postal service has asked me to deliver a bag of mail. I was about to get going on my route.

Tortoise: Oh, I understand. I mean, you being the fleetest of foot of all mortals and all, I guess you'd be a great mailman.

Achilles: Heheh. Maybe... although this isn't exactly regular mail, it's just a bunch of Christmas cards. Anyway, it shouldn't take me long. My route is circular, so I just need to visit each house in order, placing the cards in the mailboxes, and I'll be back here before you know it. Then we can go for that pizza.

Tortoise: Listen, can I give you a hand? Since the route is circular, why don't you go one way, I'll go the other way and we'll meet somewhere in between. If we're lucky enough, maybe we'll even arrive to the same house at the same time. What do you say?

Achilles: Okay, thanks for the help, Mr. T. I'll tell you what, if we do arrive to the same house at the same time, I'll pay for the pizza.

Tortoise: You got it. Let's go...

Achilles and the Tortoise are going to deliver Christmas cards to a group of N houses, identified with integers $1, 2, \ldots, N$. Their starting point is identified with the number zero. The houses are in a circular route, such that there are bi–directional routes between 0 and 1, 1 and 2, ..., $(N-1)$ and N, and finally N and 0.

Achilles starts visiting houses in increasing order: $0, 1, 2, \ldots$ while the Tortoise visits them in decreasing order: $0, N, N-1, N-2, \ldots$. They may move at different speeds (and know different shortcuts to go from one house to another), but you are given the list of times that each of them requires to go from each house to the next. Determine if they will arrive at some common house at the same time. Consider only the time they spend moving through the roads, the time they spend putting the cards in the mailboxes is negligible.

Input

Input starts with a positive integer **T**, that denotes the number of test cases. The first line of each test case contains an integer **N**, which denotes the number of houses.

The next line contains $N+1$ integers: $A_0, A_1, A_2, \ldots, A_N$, which represent the times that Achilles requires to move between adjacent pairs of locations in the route. A_i for $0 \leq i < N$ represents the time between locations i and $i+1$. A_N represents the time between N and 0.

The third line contains another $N+1$ integers: $T_0, T_1, T_2, \ldots, T_N$. These represent the times for the Tortoise.

$T \leq 100$; $1 \leq N \leq 1000$; $1 \leq A_i, T_i \leq 10^4$

Output

For each test case, print the case number, followed by the string **yes** or **no** indicating if they arrive at some house at the same time. If they do, print the number that identifies the house where they meet as well.

Sample Input	Output for Sample Input
2 4 6 10 20 15 15 22 11 50 24 12 7 35 55 20 2 90 40 10 7 11 2 81 23 43 29 12 14	Case 1: yes 3 Case 2: no